APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/629,415	08/01/2000	Mark C. Fowler	0100.0001150	6068

7590	06/03/2005

Markison & Reckamp PC
P O Box 06229
Wacker Drive
Chicago, IL 60606-0229

EXAMINER
CHUNG, DANIEL J

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.
09/629,415</td><td>Applicant(s)
FOWLER ET AL.</td><td></td></tr>
<tr><td>Examiner
Daniel J. Chung</td><td>Art Unit
2672</td><td></td></tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10 December 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>2-8,10-12 and 14-21</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>6-8</u> is/are allowed.

6)☒ Claim(s) <u>2-5, 10-12 and 14-21</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claims 2-8, 10-12 and 14-21 are presented for examination. This office action is

in response to the amendment, which filed on 12-10-2004.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-5,10-12 and 14-21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Zhao et al (5,945,997) in view of Long et al (6,483,519)

Regarding claim 20, Zhao et al discloses that the claimed feature of a system for

traversing and rendering a graphic primitive, comprising: a setup engine [i.e. "triangle

setup module"; 810] that outputs representative values of a graphic primitive (See Fig 8,

col 7 line 33, col 19 line 5-16); and a raster engine [i.e. "graphic engine"] that receives

the representative values of the graphic primitive and forms therefrom representative

pixels, the raster engine having at least a scan module [i.e. "span/edge walk module";

808,809] that scans only pixels within the graphic primitive and assigns data values to

each of the pixels and a look ahead module [808, 809] that identifies pixels that are

inside of the primitive (See Fig 8, col 7 line 24-45, col 7 line 65-col 8 line 38); wherein

the look ahead module [808,809] processes successive pixels one at a time using edge

functions [i.e. "linear equation describing edges of primitive"] to determine whether a

next pixel is within the graphic primitive. (See Fig 8, col 7 line 24-45, col 7 line 65-col 8

line 38)

Zhao et al does not explicitly disclose that "scanning a pixel within the primitive

while the look-ahead module processes the next pixel." However, such limitation is

shown in the teaching of Long et al. ["The operation of the edge processing module 400

[look-ahead module in recited claims] **during** a scan line render operation [scan module

in recited claims] ..."] (See col 11 line 50-53, Abstract, Fig 4) It would have been

obvious to one skilled in the art to incorporate the teaching of Long et al into the

teaching of Zhao et al, in order to provide "processing graphic objects for fast rasterised

rendering" (See Title, Abstract line 20 in Long et al), as such improvement is also

advantageously desirable in the teaching of Zhao et al for generating a pixel data for the

graphic primitive with a accelerated/rapid manner of rasterizing a graphic primitive in a

graphics system.

Regarding claim 2, Zhao et al discloses that the scan module is structured to

perform block mode scanning [i.e. "block scanning"]. (See Fig 4, col 4 line 20-22, col 10

line 52-56)

Regarding claims 3 and 4, Zhao et al discloses that the graphic primitive is a triangle, and wherein the representative values are at least one edge function ["edge equation"] of the triangle/a longest side of the triangle and slope values for at least one vertex of the triangle. (See Fig 2, Fig 4, Fig 8, col 7 line 24-45, col 7 line 65-col 8 line 38)

Regarding claim 5, Zhao et al discloses that the scan module [808,809] is structured to check a next adjacent pixel while processing a current pixel to determined if the next adjacent pixel is inside the triangle. (See Fig 8, col 7 line 24-45, col 7 line 65-col 8 line 38)

Regarding claims 10-12, Claims 10-12 are respectively equivalent to claims 2-4, and thus the rejections to claims 2-4 hereinabove are also respectively applicable to claims 10-12.

Regarding claim 14, Zhao et al discloses that a data value is assigned to a current pixel within the triangular primitive, and a data value is saved for a next pixel within the triangular primitive only when the next primitive is within the triangular primitive. (See Fig 1, Fig 4)

Regarding claim 15, Zhao et al discloses that data values are assigned only to pixels within the triangular primitive and never to pixels outside of the triangular primitive. (See Fig 4, Fig 13)

Regarding claim 16, Zhao et al discloses that the second module forms a plurality of data values for each pixel. (See Fig 8, col 7 line 24-45, col 7 line 65-col 8 line 38)

Regarding claim 18, Zhao et al discloses that each edge function is associated with one particular edge of the graphic primitive and determines whether or not the next pixel in the horizontal direction is within the graphic primitive with respect to the one particular edge. (See Fig 8, col 7 line 24-45, col 7 line 65-col 8 line 38)

Regarding claim 19, Zhao et al discloses that each edge function returns a positive result if the next pixel is within the graphic primitive with respect to the one particular edge. (See Fig 8, col 7 line 24-45, col 7 line 65-col 8 line 38)

Regarding claims 20-21, claims 20-21 are similar in scope to the claims 17 and 4, and thus the rejections to claims 17 and 4 hereinabove are also applicable to claim 20-21.

Allowable Subject Matter

Claims 6-8 are allowed

Response to Arguments

Applicant's arguments with respect to claim 2-5,10-12 and 14-21 have been

considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Daniel J. Chung whose

telephone number is (703) 306-3419. He can normally be reached Monday-Thursday

and alternate Fridays from 7:30am- 5:00pm. If attempts to reach the examiner by

telephone are unsuccessful, the examiner's supervisor, Michael, Razavi, can be

reached at (703) 305-4713.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9306 (Central fax)

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal

Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the Technology Center 2600 Customer Service Office

whose telephone number is (703) 306-0377.

djc
May 25, 2005
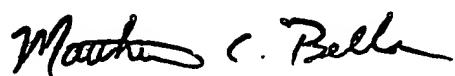
Matthew C. Bella

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600